Reprinted from THE OPHTHALMOSCOPE, *December*, 1914.]

LIBRARY

4.

THE TEACHING OF CLINICAL OPHTHALMOLOGY.

BY

C. O. HAWTHORNE, M.D.Glasg.

PHYSICIAN TO THE HAMPSTEAD AND NORTH-WEST LONDON HOSPITAL AND TO THE ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN; FORMERLY EXAMINER IN THE UNIVERSITIES OF ABERDEEN, EDINBURGH, AND GLASGOW.

THE question of the teaching of ophthalmology to students of medicine, when discussed in a medical society or journal, may be taken to mean instruction in such knowledge of the visual apparatus, and of the function of vision, as is likely to be of service in the diagnosis, prognosis, and treatment of disease. No doubt this clinical teaching, to be effective, implies a sufficient training in the embryology, anatomy, physiology, and pathology of the several anatomical structures concerned. This training, however, falls to be provided in the appropriate sections of the medical curriculum, and its organisation hardly comes within the present purpose. It is the application of these preliminary studies to medical and surgical practice which constitutes ophthalmology in the ordinary sense of this term, and hence the subject to be considered in the present paper may be more precisely stated as the teaching of ophthalmology in its clinical or practical aspects. That this involves instruction in the actual conditions of disease existing in individual patients is, of course, obvious; and the immediate question is, by what machinery should this instruction be supplied. In reply, and as a statement of general principle, my proposal would be that clinical ophthalmology, like other branches of the medical art, should be taught in those divisions of the medical curriculum where its application has the greatest opportunity of practical service. The art of percussion is taught in clinical medicine because there is its occasion and value. The methods of amputation are taught in clinical surgery because there is their field of application. The teaching of ophthalmology ought to be determined by a similar principle; and were this principle adopted, its translation into an active policy would proceed upon obvious and readily defined lines.

Thus, in the first place, there are certain clinical disturbances and defects in the eyeball which are mainly or solely of importance as local conditions producing a greater or lesser degree of visual disturbance—the presence of a foreign body, an opacity of the lens, a corneal ulcer, and an error of refraction, may be mentioned as examples. Further, these and such-like local conditions can very largely be removed, or favourably modified, by operative or other mechanical methods; and their recognition and rectification constitutes the department of ophthalmology known as ophthalmic surgery. Therefore, in accordance with the principle above enunciated, it is in the department of ophthalmic surgery that the student should be taught how to recognise, and how to treat, those clinical states of the eyeball which are susceptible of relief by operative, mechanical, or other topical methods.

As contrasted with diseased conditions of local importance, there are other disturbances of the visual apparatus which are not capable of mechanical treatment, and which are significant mainly because they are evidences of the existence of visceral or constitutional disease. Paralysis of the ocular musculature, retinal hæmorrhages or exudations or embolism, optic neuritis or atrophy, and disturbances in the visual fields, may each, no doubt, produce serious ocular and visual symptoms, but each of them is of high clinical importance chiefly because its existence establishes a demand for a complete investigation of all parts of the body as a necessity both for accurate diagnosis and appropriate treatment. In other words, every one of these disturbances claims the application of the methods which are systematically in operation in the teaching of clinical medicine. A knowledge of these conditions, therefore, finds its practical application not in surgery but in medicine, and hence, on the principle already defined, it is in the medical wards and out-patient department that medical ophthalmology, as distinct from surgical ophthalmology, should be practised and taught.

The adoption of the plan thus proposed would have various and considerable advantages. First, it would present those clinical disturbances of the visual apparatus which are an expression of constitutional disease, in their natural setting and amidst their natural relationships. Retinitis, to take a simple example, is as much a part of kidney disease as is pericarditis, and its clinical study ought to be conducted in accordance with this doctrine. A homonymous hemianopia carries the same clinical message as does a hemiplegia, and both require identical methods of investigation and diagnosis. Thus, to quote only these two illustrations, retinitis and hemianopia have their natural field of study in association with the diseases which cause them, that is in the department of clinical medicine, and anything which divorces them from this position is artificial, and is therefore disadvantageous to liberal studies and to correct perspective.

A second advantage of the teaching arrangements here proposed is that their adoption would leave the student free, during his necessarily brief stay in the department of ophthalmic surgery, to devote his attention entirely to such appropriate subjects as errors of refraction, external diseases of the eye, and operative procedures. He would escape the attempt, hopeless in the short opportunities at his disposal, to do justice to these, and at the same time fully to study changes which are incidents in the evolution of general diseases and not mere displays for ophthalmoscopic contemplation.

Thirdly, the systematic recognition in the teaching of clinical medicine of the possible contribution from ophthalmological investigation, would keep constantly before the mind of the student the conclusion that the absence of all complaint of defective sight is no guarantee of the possession of a healthy fundus oculi. Hence he would learn, both from precept and from example, the necessity of an ophthalmoscopic examination in every patient. Further, as the student necessarily spends a relatively long time in the study of clinical medicine, the rule just mentioned would mean that he would have the opportunity of examining many normal eyes (a most important part of his education), and that he would become apt and confident both in methods of examination and in his ophthalmoscopic observations and judgments. Here, as elsewhere, the only adequate preparation for the detection of the abnormal is a thorough and sustained education in the extent and limits of the normal.

To put these advantages in a word, teaching conducted along the lines here suggested would secure for the student an undivided attention to surgical methods in the surgical clinic, and would, in clinical medicine, that is in the appropriate atmosphere, train him to appreciate the relation between certain ocular and visual disturbances and the general diseases of which these disturbances form a part.

It may be well to consider two objections which may possibly be urged against these proposals. First, it may be said that in clinical medicine the student cannot be instructed in optics, or in what are somewhat grandiloquently termed " the principles of the ophthalmoscope." The reply to this objection is, that in so far as such instruction is necessary, it is already provided in the classes of physics and physiology; and, further, and on the strictly practical plane, it is to be noted that the examination of the fundus oculi and other parts of the eyeball, particularly in these days of the self-lit electric ophthalmoscope, is a matter of great simplicity, and needs practical training and opportunity rather than theoretical instruction.

In the second place, it may be objected that among medical patients ocular changes as the result of general diseases are not frequent, and that, therefore, on the plan proposed, the student's education would be scanty and incomplete. To this it may be answered that such conditions would be discovered more frequently were they looked for as a matter of routine. And again, in so far as this objection is well founded, it must mean that cases of nervous disease, of cardio-vascular disease, and of kidney disease, are detained in the ophthalmic surgical clinic, when, manifestly, all such cases require the methods of investigation and treatment practised in the department of clinical medicine. Neither one objection nor the other has much valid foundation, and neither opposes any substantial difficulty to the arrangement of ophthalmological teaching on the plan here indicated.

To present now in summary the scheme which I wish to suggest, instruction in ophthalmology for medical students should be conducted in three departments—

1. Instruction in the optical relations of the eyeball and of the ophthalmoscope in the classes of physics and physiology; in the latter, also, the student's attention would be directed to the relations which exist between the several parts of the visual field and the corresponding parts of the visual pathway.
2. Instruction in the systematic use of the ophthalmoscope, of the perimeter, and of the methods of testing the musculature of the eyeballs, in the medical wards and out-patient department, where there should be a complete collection of ophthalmoscopic pictures illustrating the various diseased conditions of the fundus oculi.
3. Instruction in the estimation and correction of refractive errors, in operative methods, and in the diagnosis and treatment of external diseases of the eyeball and its related parts, in the department of ophthalmic surgery.

Probably, as in other branches of practice, there would be a certain amount of overlapping in these several divisions, but this need not in any appreciable degree confuse the main lines of the proposal. This proposal, if adopted, would secure a combination by which, and as I venture to think, by which alone, the practitioner can be equipped to take from ophthalmology the full service it is capable of rendering in the wide field of medical and surgical practice.